DNA sequencing was performed on an Applied Biosystems 3130xl Genetic Analyzer.

Results: All the sequences of the 24 samples produced by direct sequencing were wild type, with no any known drug-resistant mutation detected. A total of 70 viral gene clones were obtained and sequenced for the 24 samples, with average 2.9 clones per sample. Clonal sequencing detected 4 drug resistance-associated mutations (PI, V82A; NRTI, M184V, K70E; NNRTI, K101E) from the viral clones of 4 samples; therefore the prevalence rate of primary HIV-1 drug-resistance in the minor HIV-1 populations was 16.7% (4/24).

Conclusion: Our data suggest that a considerable proportion of treatment-naïve patients are infected by drug-resistant HIV-1 virus in Singapore, but it was not detected by conventional direct sequencing. This finding has important implications for the clinical management and public health of HIV-1, and also suggests that more sensitive genotyping method should be employed to determine the baseline of HIV-1 primary drug-resistance.

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55.011

Prevalence of HIV-1 primary resistance among HIV chronically infected patients in Brazil's Southeast region

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Background: The prevalence of HIV primary resistance mutations has increased overtime and transmitted mutations can persist in HIV-1 chronically infected patients. Studies have shown that it is cost-effective to perform primary resistance testing when one observes a prevalence of HIV-1 primary resistance above 5% in a certain geographical location. Nevertheless, such studies were conducted among acutely/recent HIV infected patients. Our study hypothesis was that HIV-1 primary resistance prevalence would be greater than 5% among HIV-1 chronically infected patients with indication for antiretroviral therapy in Brazil's Southeast (SE) region.

Methods: We have included 75 patients from 2 major cities: 47 from Rio de Janeiro and 28 from Santos. Our population profile was non-pregnant chronically HIV-1 infected patients with indication for antiretroviral therapy based on National Guidelines. HIV DNA was extracted and amplified from dried blood spots samples. HIV's *pol* gene protease and reverse transcriptase regions were sequenced. Antiretroviral resistance mutations algorithm which excludes frequent polymorphisms was utilized.

Results: Prevalence of HIV-1 primary resistance was 17,3%. 18 mutations were observed among 13 out of 75 included patients. Of these 18 mutations, 10 were related with NRTI's, 8 were related to NNRTI's and none to PI's. The most commonly detected mutations were: K103N (16.6%), T69D (11.1%), M41L (11.1%). Only 4% (3 individuals) had two class (NRTI and NNRTI) primary resistance mutations. The most prevalent HIV subtype was B (77.3%), followed by BF (33.3%), F (6.66%) and C (1.3%).

Conclusion: High primary resistance levels were observed according to WHO's definition (5—15%), suggesting being cost-effective to perform primary resistance testing in this region. The increased prevalence of NNRTI's mutations and the absence of M184V mutations are two findings observed in this study, contrasting with previous studies from Brazil.

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Challenges of antiretroviral therapy among children aged 6 to 15 years in Kabarole district (Western Uganda)

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Background: HIV/AIDS is one of the leading causes of mortality among children in Kabarole district. It is however unknown how many children are on ART and there is very little documented evidence of the challenges faced by children aged 6 to 15 years on ART.

Methods: A cross-sectional study was conducted to assess the challenges associated with ART among children aged 6 to 15 years in Kabarole district. Quantitative data were collected using a semi structured interviewer administered questionnaire and qualitative using Key Informant interviews. Adherence levels were assessed using self report information from caretakers and children 10 years and above. Logistic regression models were used to estimate odds ratios (OR's) of adherence and their associated 95% confidence intervals.

Results: As at 30th April 2009, there were 478 children on ARV's in the district. Of the 332 children in the study, 51% were girls and 66.3% were aged 9-12 years. Using one month recall, 95.5% of the respondent's adherence was 100%, 1.8% had 95-99% and 2.7% had adherence levels of less than 95%. On 3-day recall, 98.5% had 100% adherence, 1.5% had less than 95% adherence. Major challenges were a low proportion of children on ART, 42.5% of respondents failed to get transport at least once, 51% were orphans, co-trimoxazole stock outs at government facilities, lack of follow up and inadequate support supervision.

Conclusion: Co-trimoxazole prophylaxis among children aged 6 to 15 years was found to be a plausible predictor of adherence. Challenges to ART are numerous and solutions to them require a multi-faceted approach.

Recommendations: Co-trimoxazole prophylaxis should be prioritised in all ART clinics for children aged 6 to 15 years. There's need for collaboration between DHT and hospitals in support supervision of lower health units. Home visits and training of staff need to be reinforced.

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